

Orion[®] AstroView[™] 90mm EQ

#9024 Equatorial Refracting Telescope



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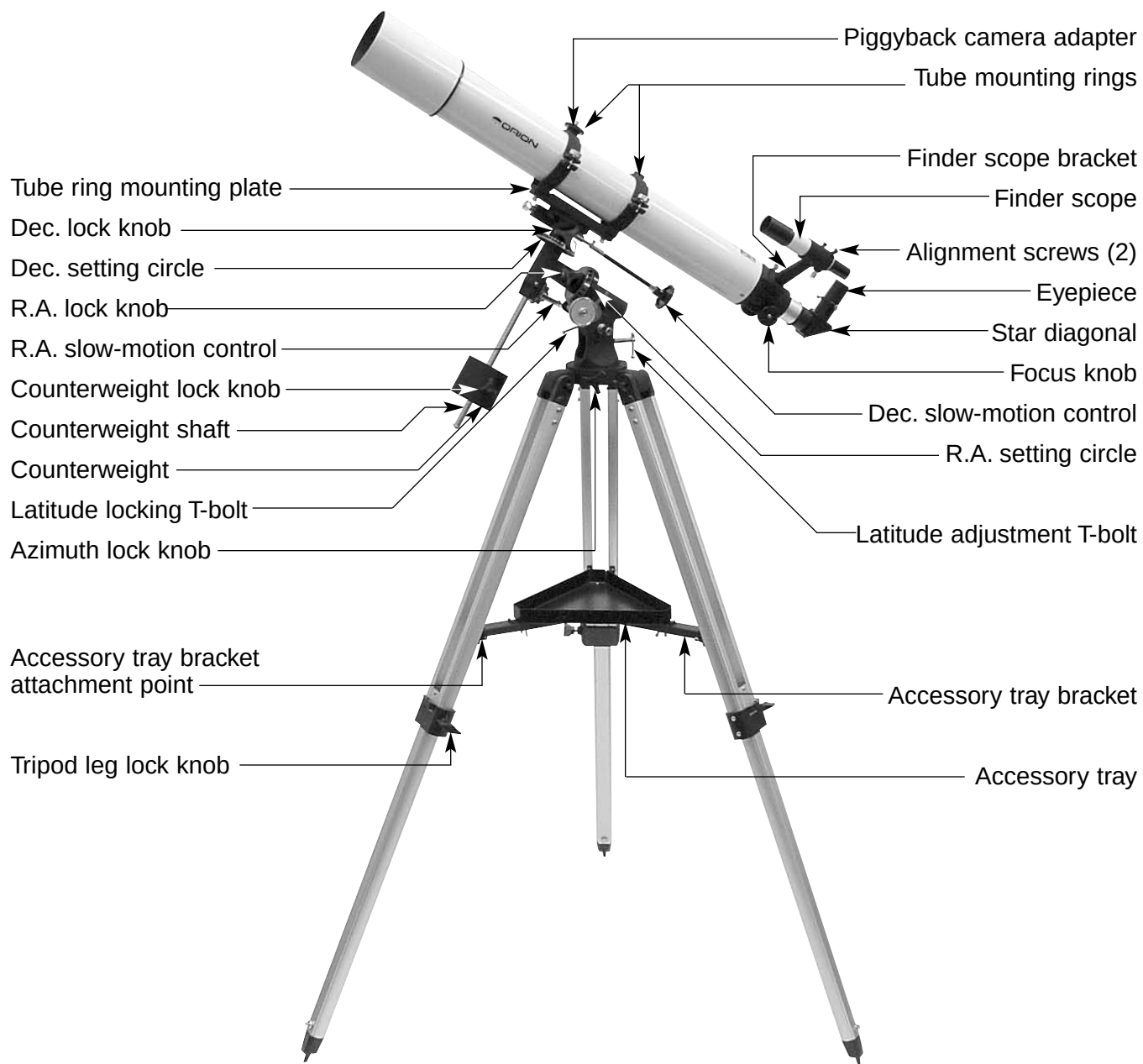


Figure 1. AstroView 90 EQ Parts Diagram

Congratulations on your purchase of a quality Orion telescope. Your new AstroView 90mm EQ Refractor is designed for high-resolution viewing of astronomical objects. With its precision optics and equatorial mount, you'll be able to locate and enjoy hundreds of fascinating celestial denizens, including the planets, Moon, and a variety of deep-sky galaxies, nebulae, and star clusters.

If you have never owned a telescope before, we would like to welcome you to amateur astronomy. Take some time to familiarize yourself with the night sky. Learn to recognize the patterns of stars in the major constellations; a star wheel, or planisphere, available from Orion or from your local telescope shop, will greatly help. With a little practice, a little patience, and a reasonably dark sky away from city lights, you'll find your telescope to be a never-ending source of wonder, exploration, and relaxation.

These instructions will help you set up, properly use, and care for your telescope. Please read them over thoroughly before getting started.

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1. Parts List

Qty. Description

1	Optical tube assembly
1	German-type equatorial mount
2	Slow-motion control cables
1	Counterweight
1	Counterweight shaft
3	Tripod legs
1	Accessory tray with mounting hardware
1	Accessory tray bracket
2	Optical tube mounting rings (located on optical tube)
1	6x30 achromatic crosshair finder scope
1	Finder scope bracket with O-ring
1	Mirror star diagonal (1.25")
1	25mm (36x) Sirius Plössl eyepiece (1.25")
1	10mm (91x) Sirius Plössl eyepiece (1.25")
1	Objective lens dust cap
4	Assembly Tools (2 wrenches, Phillips-head screwdriver, flat-head screwdriver key)

2. Assembly

Carefully open all of the boxes in the shipping container. Make sure all the parts listed in the parts list are present. Save the boxes and packaging material. In the unlikely event that you need to return the telescope, you must use the original packaging.

Assembling the telescope for the first time should take about 30 minutes. No tools are needed other than the ones provided. All screws should be tightened securely to eliminate flexing and wobbling, but be careful not to over-tighten or the threads may strip. Refer to Figure 1 during the assembly process.

During assembly (and anytime, for that matter), Do not touch the surfaces of the telescope objective lens or the lenses of the finder scope or eyepieces with your fingers. The optical surfaces have delicate coatings on them that can easily be damaged if touched inappropriately. Never remove any lens assembly from its housing for any reason, or the product warranty and return policy will be void.

1. Lay the equatorial mount on its side. Attach the tripod legs one at a time to the mount using the screws installed in the tops of the tripod legs. Remove the screw from the leg, line up the holes in the top of the leg with the holes in the base of the mount, and reinstall the screw so it passes through the leg and the mount. Make sure that a washer is between the screw head and the tripod leg and between the wingnut and tripod leg. Tighten the wingnuts only finger-tight, for now. Note that the accessory tray bracket attachment point on each leg should face inward.
2. Tighten the leg lock knobs at the base of the tripod legs. For now, keep the legs at their shortest (fully retracted) length; you can extend them to a more desirable length later, after the scope is completely assembled.
3. With the tripod legs now attached to the equatorial mount, stand the tripod upright (be careful!) and spread

WARNING: *Never look directly at the Sun through your telescope or its finder scope—even for an instant—without a professionally made solar filter that completely covers the front of the instrument, or permanent eye damage could result. Young children should use this telescope only with adult supervision.*

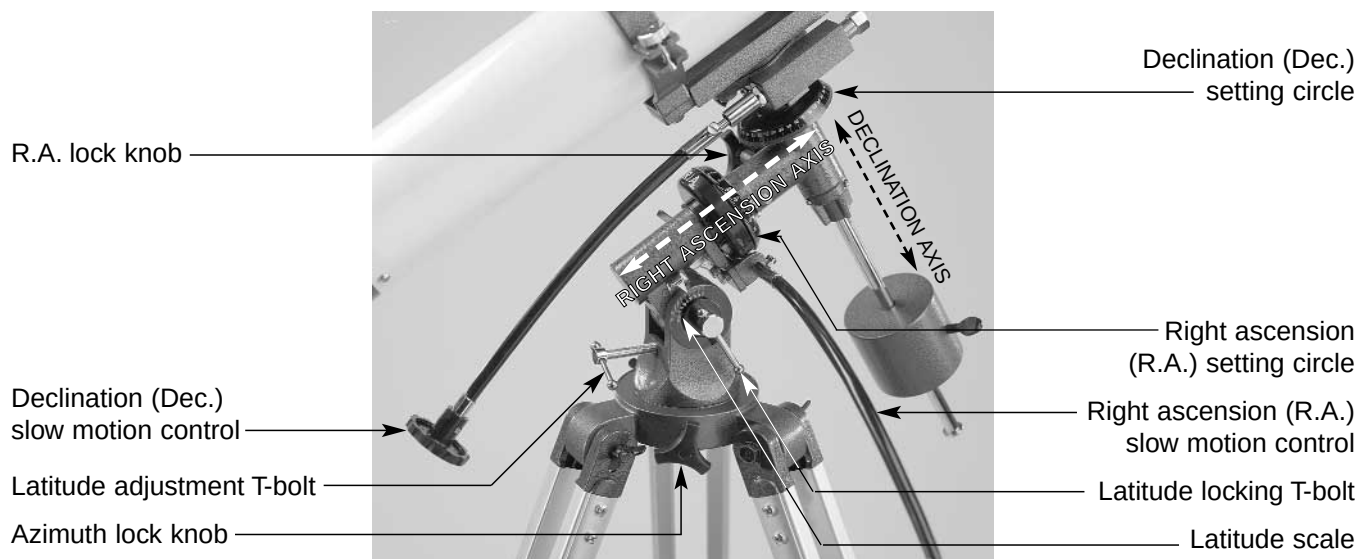


Figure 4. The equatorial mount.

2. Loosen the latitude locking T-bolt. Turn the latitude adjusting T-bolt and tilt the mount until the pointer on the latitude scale is set at the latitude of your observing site. If you don't know your latitude, consult a geographical atlas to find it. For example, if your latitude is 35° North, set the pointer to +35. Then retighten the latitude locking T-bolt. The latitude setting should not have to be adjusted again unless you move to a different viewing location some distance away.
3. Loosen the Dec. lock knob and rotate the telescope optical tube until it is parallel with the R.A. axis. The pointer on the Dec. setting circle should read 90°. Retighten the Dec. lock knob.
4. Loosen the azimuth lock knob and rotate the entire equatorial mount left-to-right so the telescope tube (and R.A. axis) points roughly at Polaris. If you cannot see Polaris directly from your observing site, consult a compass and rotate the equatorial mount so the telescope points North. Retighten the azimuth lock knob.

The equatorial mount is now approximately polar-aligned for casual observing. More precise polar alignment is required for astrophotography. Several methods exist and are described in many amateur astronomy reference books and astronomy magazines.

Note: From this point on in your observing session, you should not make any further adjustments in the azimuth or the latitude of the mount, nor should you move the tripod. Doing so will undo the polar alignment. The telescope should be moved only about its R.A. and Dec. axes.

Use of the R.A. and Dec. Slow-Motion Control Cables

The R.A. and Dec. slow-motion control cables allow fine adjustment of the telescope's position to center objects with-

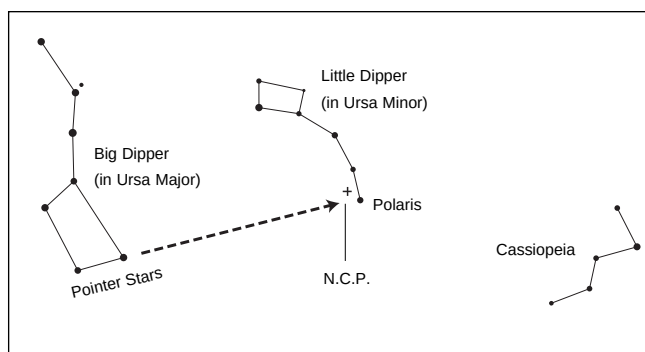


Figure 5. To find Polaris in the night sky, look north and find the Big Dipper. Extend an imaginary line from the two "Pointer Stars" in the bowl of the Big Dipper. Go about five times the distance between those stars and you'll reach Polaris, which lies within 1° of the north celestial pole (NCP).

in the field of view. Before you can use the cables, you must manually "slew" the mount to point the telescope in the vicinity of the desired target. Do this by loosening the R.A. and Dec. lock knobs and moving the telescope about the mount's R.A. and Dec. axes. Once the telescope is pointed somewhere close to the object to be viewed, retighten the mount's R.A. and Dec. lock knobs.

The object should now be visible somewhere in the telescope's finder scope. If it isn't, use the slow-motion controls to scan the surrounding area of sky. When the object is visible in the finder scope, use the slow-motion controls to center it. Now, look in the telescope with a long focal length (low magnification) eyepiece. If the finder scope is properly aligned, the object should be visible somewhere in the field of view.

Once the object is visible in the telescope's eyepiece, use the slow-motion controls to center it in the field of view. You can now switch to a higher magnification eyepiece, if you